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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SEFCHECK, GREGORY B	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/824,819	DALEY ET AL.	
	Examiner	Art Unit	
	GREGORY B. SEFCHECK	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8,9 and 11-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8, 9, 11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Appeal Brief filed on 6/12/2009, PROSECUTION IS HEREBY REOPENED. A new rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2419.

- Claims 7 and 10 were previously cancelled.
- Claims 1-6, 8, 9, and 11-17 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 8, 9, 11, 12, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (Fig. 3), hereafter APA, in view of Lui et al. (US005337413A), hereafter Lui, and Hover (US20030177144A1).

- Regarding Claims 8 and 17,

APA discloses a communication system having a main data bus 12 and an extended data bus 14 (claim 8 - main data bus, extended data bus).

APA further discloses a central computer 38 connected to the main bus (claim 8 - a central computer in communication with the main data bus).

APA also shows electronic package 16 (interface) that forms a link between the main bus and extended bus (claim 8 - integrated interface for a communication system that forms link between main data bus and extended data bus).

APA shows that a bus repeater 18 is included in the electronic package, having transceiver 20 coupled to the main bus and transceiver 22 coupled to the extended bus (claim 8 - a bus repeater having a first data interface to couple with a main bus and second data interface to couple with an extended bus; claim 8 - first data interface is a first transceiver and the second data interface is a second transceiver).

APA discloses remote terminal interface control logic 30 also included in the electronic package. However, APA does not explicitly show the logic in direct communication with the bus repeater. APA also does not explicitly disclose the bus repeater or remote terminal is programmable.

Lui discloses an environment monitoring system for standard interface bus computer systems (Title). Referring to Fig. 1, Lui discloses a host adapter 3 (integrated interface) that forms a communication link between a main bus 2 connected to host 1 and an extended bus 2 connected to remote devices 13. Lui shows that the adapter includes a bus repeater 4 and monitor logic 5 that is directly connected to the bus repeater by links 11,12 (claim 8 - a remote terminal in direct communication with the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA by directly connecting control logic to the bus repeater within an integrated interface between a main bus and an extended bus, as shown by Lui. This would enable communication from control logic associated with programmable remote devices to the host/central computer without requiring an additional dedicated address port on the adapter (Lui, Col. 2, lines 35-40).

Lui also discloses information used in operating the bus repeater 4, monitoring logic 5, and remote devices 13 can be specified through communication of a control program running on the host processor 1, enabling the controlling (programming/re-

programming) of, for example, the ambient temperature of the remote devices 13 (Fig. 1; Col. 5, lines 27-41).

However, Lui does not explicitly disclose programming/re-programming using a high-level programming language.

Hover discloses high-level computer programs such as C++ and the like that are capable of being transmitted to remote devices over a network in order to configure and control parameters such as temperature, power status, etc. (Pg. 2, paragraph 18; claim 8 - at least one of the bus repeater and the remote terminal is a programmable device capable of being programmed and reprogrammed using a high level programming language; claim 17 – programmable device is programmed in a high level programming language wherein code resulting from programming/reprogramming can be ported to another device).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA and Lui by utilizing a high-level programming language for controlling the temperature of the remote devices, as shown by Hover, thereby improving the ease with which a user can remotely configure and control the system.

- Regarding Claim 9,

APA discloses a communication system and interface that meets all limitations of the parent claims.

APA does not explicitly disclose transceiver 20 or 22 including analog-to-digital conversion circuitry and digital-to-analog conversion circuitry.

However, APA discloses that remote terminal interface control logic 30 receives and responds to messages from the remote terminals 10 over the extended bus after converting the analog signals to a digital format (see Background section of the Specification, Pg. 2, paragraph 5; claim 9 - at least one of the first and second transceivers includes analog-to-digital conversion circuitry and digital-to-analog conversion circuitry).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement analog-to-digital and digital-to-analog circuitry in at least one of the transceivers in APA. One of ordinary skill would be motivated to perform this implementation because the remote terminal interface control logic 30 requires analog-digital conversion circuitry to process messages from the remote terminals 10 over the extended bus.

- Regarding Claims 11 and 12,

APA discloses a communication system and interface that meets all limitations of the parent claims.

APA does not explicitly disclose the bus repeater comprising programmable signal filter and reconstruction control logic for reconstructing received data and controlling the direction of data through the bus repeater.

Lui discloses control logic (Fig. 2) for controlling the operation of the bus repeater when switching between Bypass and Monitor modes, including the re-shaping of data and the direction of data through the adapter 3 (Col. 4, lines 39-42; Col. 7, lines 20-67; claim 11 - bus repeater comprises signal filtering and reconstruction control logic that reconstructs received data and controls a transmit/receive direction of data through the bus repeater).

Lui also discloses information used in operating the bus repeater 4 and monitoring logic 5 can be specified through communication of a control program running on the host processor 1 (Fig. 1; Col. 5, lines 27-41; claim 12 - signal filtering and reconstruction control logic is in a reprogrammable device in the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA by providing programmable control logic for controlling the operating modes of the bus repeater and controlling the direction of data through the interface, as shown by Lui, thereby enabling the bus repeater and control logic to properly cooperate through common interfaces to the main bus and extended bus.

- Regarding Claims 14 and 15,

APA discloses a communication system and interface that meets all limitations of the parent claims.

APA discloses an example of the system as an aircraft communication system in which the plurality of remote terminals 10 coupled to the extended bus are associated

with weapons on the aircraft (see also Background section of the Specification, Pg. 1, paragraph 2; claim 14 – system is an aircraft communication system; claim 15 – plurality of remote device terminals in communication with the extended bus; claim 15 – each remote device terminal associated with an aircraft weapon).

4. Claims 1-6, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Lui and Hover, and further in view of Alexander, III et al. (US006701402B1), hereafter Alexander.

- Regarding Claims 1, 2, and 16,

APA discloses a communication system having a main data bus 12 and an extended data bus 14. APA further discloses a central computer 38 connected to the main bus. APA also shows electronic package 16 (interface) that forms a link between the main bus and extended bus (claim 1 - integrated interface for a communication system that forms link between main data bus and extended data bus).

APA shows that a bus repeater 18 is included in the electronic package, having transceiver 20 coupled to the main bus and transceiver 22 coupled to the extended bus (claim 1 - a bus repeater having a first data interface to couple with a main bus and second data interface to couple with an extended bus; claim 2 - first data interface is a first transceiver and the second data interface is a second transceiver).

APA discloses remote terminal interface control logic 30 also included in the electronic package. However, APA does not explicitly show the logic in direct communication with the bus repeater.

Lui discloses an environment monitoring ystem for standard interface bus computer systems (Title). Referring to Fig. 1, Lui discloses a host adapter 3 (integrated interface) that forms a communication link between a main bus 2 connected to host 1 and an extended bus 2 connected to remote devices 13. Lui shows that the adapter includes a bus repeater 4 and monitor logic 5 that is directly connected to the bus repeater by links 11,12 (claim 1 - a remote terminal in direct communication with the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA by directly connecting control logic to the bus repeater within an integrated interface between a main bus and an extended bus, as shown by Lui. This would enable communication from control logic associated with programmable remote devices to the host/central computer without requiring an additional dedicated address port on the adapter (Lui, Col. 2, lines 35-40).

Lui also discloses information used in operating the bus repeater 4, monitoring logic 5, and remote devices 13 can be specified through communication of a control program running on the host processor 1, enabling the controlling (programming/re-programming) of, for example, the ambient temperature of the remote devices 13 (Fig. 1; Col. 5, lines 27-41).

However, Lui does not explicitly disclose programming/re-programming using a high-level programming language.

Hover discloses high-level computer programs such as C++ and the like that are capable of being transmitted to remote devices over a network in order to configure and control parameters such as temperature, power status, etc. (Pg. 2, paragraph 18; claim 1 - at least one of the bus repeater and the remote terminal is a programmable device capable of being programmed and reprogrammed using a high level programming language; claim 16 – programmable device is programmed in a high level programming language wherein code resulting from programming/reprogramming can be ported to another device).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA and Lui by utilizing a high-level programming language for controlling the temperature of the remote devices, as shown by Hover, thereby improving the ease with which a user can remotely configure and control the system.

Neither APA, Lui nor Hover explicitly disclose bus idle detection circuitry in the bus repeater.

Alexander discloses selectively operating a host's device controller in a first or second mode (Title). Alexander discloses logic circuitry for detecting when the bus is idle (Col. 1, lines 55-65; claim 1 - bus idle detection circuit in the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Lui by implementing bus idle detection circuitry, as shown by Alexander, in the bus repeater, in order to provide the bus repeater and control logic of the integrated adapter with an indication of data to be processed over the bus from the host or remote devices.

- Regarding Claim 3,

APA discloses a communication system and interface that meets all limitations of the parent claims.

APA does not explicitly disclose transceiver 20 or 22 including analog-to-digital conversion circuitry and digital-to-analog conversion circuitry.

However, APA discloses that remote terminal interface control logic 30 receives and responds to messages from the remote terminals 10 over the extended bus after converting the analog signals to a digital format (see Background section of the Specification, Pg. 2, paragraph 5; claim 3 - at least one of the first and second transceivers includes analog-to-digital conversion circuitry and digital-to-analog conversion circuitry).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement analog-to-digital and digital-to-analog circuitry in at least one of the transceivers in APA. One of ordinary skill would be motivated to perform this implementation because the remote terminal interface control logic 30

requires analog-digital conversion circuitry to process messages from the remote terminals 10 over the extended bus.

- Regarding Claims 4-6,

APA discloses a communication system and interface that meets all limitations of the parent claims.

APA does not explicitly disclose the bus repeater comprising programmable signal filter and reconstruction control logic for reconstructing received data and controlling the direction of data through the bus repeater.

Lui discloses control logic (Fig. 2) for controlling the operation of the bus repeater when switching between Bypass and Monitor modes, including the re-shaping of data and the direction of data through the adapter 3 (Col. 4, lines 39-42; Col. 7, lines 20-67; claim 5 - bus repeater comprises signal filtering and reconstruction control logic that reconstructs received data and controls a transmit/receive direction of data through the bus repeater). Lui also discloses information used in operating the bus repeater 4 and monitoring logic 5 can be specified through communication of a control program running on the host processor 1 (Fig. 1; Col. 5, lines 27-41; claim 4 - at least one of the bus repeater and the remote terminal is a programmable device; claim 6 - signal filtering and reconstruction control logic is in a reprogrammable device in the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and interface of APA by providing programmable control logic for controlling the operating modes of the bus repeater and controlling the direction

of data through the interface, as shown by Lui, thereby enabling the bus repeater and control logic to properly cooperate through common interfaces to the main bus and extended bus.

- Regarding Claims 13,

Lui discloses a communication system and interface that meets all limitations of the parent claims.

Lui does not explicitly discloses bus idle detection circuitry in the bus repeater.

Alexander discloses selectively operating a host's device controller in a first or second mode (Title). Alexander discloses logic circuitry for detecting when the bus is idle (Col. 1, lines 55-65; claim 13 - bus idle detection circuit in the bus repeater).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Lui by implementing bus idle detection circuitry, as shown by Alexander, in the bus repeater, in order to provide the bus repeater and control logic of the integrated adapter with an indication of data to be processed over the bus from the host or remote devices.

Response to Arguments

5. Applicant's arguments with respect to claims 1-6, 8, 9, and 11-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY B. SEFCHECK whose telephone number is (571)272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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9/17/2009

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